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**Maintenance**

**MANAGEMENT OF DEPOT MAINTENANCE  
PROGRAMS**

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This instruction implements AFPD 21-1, *Managing Aerospace Equipment Maintenance*, and provides policies and procedures for depot maintenance work programs. It sets up the requirement for detailed work specifications, uniform work packages, and the need for formal approval before performing any task not specified in the work project. This instruction applies to the Air Logistics Centers (ALC) and the Aerospace Maintenance and Regeneration Center (AMARC). This instruction does not apply to the Air National Guard, the USAF Reserve units and members or Federal Aviation certified systems.

**SUMMARY OF REVISIONS**

This instruction updates the procedures, terminology, and responsibilities to fit the current command structure and the Product Directorate (PD) configuration at the ALCs.

**1. Purpose.** Air Worthiness and Mission Capability are the driving forces in the development of Air Force maintenance programs. Cost effectiveness and the need for verifying that effectiveness must be a primary factor in implementing and managing those maintenance programs.

**2. Policy.** Positive management control must be exercised over every stage of all depot work projects. All work authorizations and reports must be fully documented and kept in an audible format.

2.1. The Program/Production Manager will prepare work specifications according to AFMCR 65-22, *Depot Maintenance Work Specifications*, when required to support any depot repair requirement. The requirement for maintenance work specifications is in AFMCI 21-113, *Contract Maintenance Programs for Depot Maintenance Business Area (DMBA)*, or AFMCR 800-30, *Logistics Depot Maintenance Interservice*.

2.1.1. Identical work specifications are prepared when the same type program is to be accomplished at more than one maintenance facility, depot or contract. Where deviations are required

due to differences in facilities, equipment, and/or shipping distances, the reasons and extent of the deviation will be approved beforehand by the responsible Single Manager (SM). For all aircraft and missile workloads, approval by the Air Force Maintenance Requirements Review Board (MRRB) is required.

2.1.2. The ordering agency will state in the workload agreement or contract the quantity to be required, extent and level of work to be done, quality of performance criteria, the method of processing components, and the procedures to be followed for obtaining replacement items.

2.1.3. The SM will assign a Project Administration Officer (PAO) to each organic aircraft/missile Depot Maintenance (DM) program. Any SM may assign a PAO to an engine, exchangeable, modification project, or Other Major End Item (OMEI) project if necessary. Normally, the aircraft/missile PAO function is a full time position, while other PAO functions are part time assignments. Approval by the PAO or responsible representative of the funding customer is required for any maintenance not included in the project directive.

2.1.4. The SM will notify the appropriate customer of proposed schedule, work content, or funding changes affecting that customer's products requiring depot maintenance.

**3. Time Phased Planning and Review Actions.** Attachment 1 specifies the sequence for the planning and review actions which must be followed when establishing an aircraft or missile workload.

**4. Terms Explained.** Attachment 2 contains the definitions of terms used in Depot Maintenance programs.

**5. Aircraft and Missile Organic Depot Maintenance and Modification Programs.**

**5.1. Project Administration Officer (PAO) Functions .** The PAO:

5.1.1. Provides an on-the-spot interface between the SM and the organic maintenance facility. As the representative of the SM, the PAO is normally located within the maintenance facility, but not normally assigned to the maintenance organization.

5.1.2. Must have experience at the maintenance officer or depot program management level in the respective field in which they are employed. Duties are comparable to those of an Administrative Contracting Officer (ACO). Assistants may be assigned to the PAO as necessary.

5.1.3. Makes final decisions on all low frequency and over-and-above (O&A) requirements necessary to complete the work package as specified by the customer.

**5.1.4. For aircraft/missile projects.**

5.1.4.1. Monitors the high and low frequency predictable requirements for compatibility with predetermined occurrence estimates. (Note: Maintenance is responsible for the fixed price monitoring of the high frequency work package.)

5.1.4.2. Furnishes reports to the SM outlining support actions performed, the weapon system flow schedule status, and any recommended changes needed to update the DM work package. Proposes work specification changes due to increased work requirements or repair frequencies, and provides the proposed Direct Product Standard Hours (DPSH). May rely on the services of planning, scheduling, work programming, quality control and flight test for management decisions affecting the work scope and potential work package.

5.1.4.3. Participates in workload negotiations, work specification reviews, workload conferences, and the various levels of MRRB reviews.

**5.1.5. For engine projects.**

5.1.5.1. Accomplishes the duties of an ACO for engines as outlined in AFMCR 65-22.

5.1.5.2. Furnishes reports necessary for tracking to the engine SM, with a copy to the maintenance facility.

5.1.5.3. Provides assurance that any work beyond the scope of the work package is reviewed and that DPSH is available before approving the work.

**5.1.6. For exchangeables/OMEI projects.**

5.1.6.1. Performs the duties of an ACO as outlined in AFMCR 65-22.

5.1.6.2. Furnishes reports necessary for tracking to the SM, with a copy to the maintenance facility.

5.1.6.3. Provides assurance that any work not covered by the project directive, interservice agreement is reviewed and that DPSH is available before approving the work.

**5.2. O&A Operations.** O&A involves work in addition to any approved repair plan and which is not included in the work specification. The accounting, control, and approval of this work must be accomplished as follows:

5.2.1. The PAO must either approve or disapprove the removal of unserviceable/ unavailable exchangeable items. Before this approval is given, the Maintenance Review Team (MRT) must provide the results of an inquiry showing the nonavailability of the item, along with a request to repair the item. The removal and reinstallation operations will be on AFMC Form 173, **MDS/ Project Operation Assignment**, and processed according to AFMCR 66-55, *Mission Design Series (MDS)/Project Workload Planning* (currently in revision). Repairs costing up to 50 percent of the overhaul cost of the item can be accounted for on AFMC Form 127, **Routed Order**. Overhaul will be accounted for through the G004L system, according to AFMCM 66-621, *Job Order Production - Master G004L*.

5.2.2. An AFMC Form 959, **Work Control Document**, will be attached to the item being routed through a backshop. This form will contain the end item serial number, control number, part number, National Stock Number (NSN), and component serial number. This form, and AFMC Form 137, **Routed Order** (Project Directed), will be sent by the MRT to the backshop engineering/ planning unit, which will complete those forms identifying the steps needed to make the item serviceable. Each step of the description will have a DPSH entry and will be totaled. If the item can be overhauled and the Management of Items Subject to Repair (MISTR) control number is known, the backshop engineering/ planning unit will identify that control number and state the DPSH for overhaul. The originating engineering/planning unit will ensure priority processing to prevent delay in production.

5.2.3. After all forms have been completed, the PAO will review the removal, repair, and reinstallation operations to determine whether to expend O&A hours, recommend overhaul, or disapprove the action.

5.2.4. The backshop engineering/planning unit will notify the originating engineering/planning unit of the PAO approval of the operations.

5.2.5. On those operations disapproved by the PAO, the forms will be clearly marked “disapproved” and returned to the originating engineering/planning unit. PAO decisions are final. This unit will maintain all related documentation in the appropriate dead file until completely destroyed.

**5.3. Control of Handscribed Operation Assignment Cards.** Control of handscribed cards is an important process which requires strict management review. Handscribed cards are necessary to identify O&A work that cannot be accomplished without prior approval and to identify those authorized unplanned low frequency operations not included in the preprinted work deck. Both of these types of operations require PAO approval. The MRT and the PAO will screen each handscribed card before the work begins to determine if correction of the reported condition is project directed or O&A. Detailed control procedures are contained in AFMCR 66-55.

**5.4. Project Tracking and Analysis.** Project control requires a constant comparison of the man-hours negotiated in the work package against actual progress in completing the project. The PAO will use any means available to track expenditures and completions using information provided from the maintenance facility personnel. The PAO will keep a ledger reflecting all approved O&A/low frequency work for tracking expenditures and completions of man-hours. The PAO must validate the accountability of maintenance O&A/low frequency at the completion of each aircraft, missile or end item using the G073E system or another means available. At the completion of this the PAO will coordinate the actual approved DPSH with the SM/SM financial manager.

**5.5. Financial Control and Tracking.** Total Operation and Maintenance (O&M) funding for the depot maintenance program is provided by the Depot Purchased Equipment Maintenance (DPEM) customers. The depot level program authority is normally provided to the ALCs by the customers. Flexibility between Element of Expense/Investment Code (EEIC) at ALC level is dictated by the customer. Therefore, the approval of O&A work or additional requirements must be justified within the programmed fund availability by EEIC and Program Control Number (PCN) authorized. To achieve the necessary financial control, the following procedures apply:

5.5.1. The SM will identify by PCN, the funding level associated with the negotiated basic work package, and the funds associated with the anticipated O&A work.

5.5.2. The SM financial management function will separately identify on the AFMC Form 181, **Project Order**, the funds related to the approved project directive/negotiated workload and those related to the accomplishment of O&A work. As each O&A requirement generates, the maintenance activity will price out the work in terms of DPSH. After the work is accepted as necessary by the MRT and the PAO, a description of the work and the DPSH is sent to the SM and SM financial management function.

5.5.3. Upon receipt of the O&A request, the PAO will determine if the project order contains enough money to accomplish the work. If not, the SM and SM financial management function must justify and reprogram available funding to cover the increase.

5.5.3.1. When it is necessary to increase the total dollars on the PCN due to increased requirements, the financial management function will request and receive approval from the appropriate customer before authorizing the work.

5.5.3.2. After all necessary actions are completed to assure the availability of funds, the financial management function will advise the PAO who will authorize the additional work.

5.5.4. To keep a check and balance of O&A funds, the financial management function will track monthly:

5.5.4.1. O&A dollars set aside for the PCN. This must be extracted from the project order.

5.5.4.2. Costs associated with each O&A approved request.

5.5.4.3. Dollars added to the project orders for additional requirements.

## **6. Engine Depot Maintenance and Modification Programs.**

**6.1. Controls and Tracking.** Major repair of engines is controlled to ensure that all taskings contained in the project directive and work specification are completed. The engine SM will:

6.1.1. Have formal work specification reviews with the maintenance facility, and assure that a common understanding is reached as to the work outlined for each Type/Model/ Series (TMS).

6.1.2. Ensure that the work specification includes directions for the maintenance facility to furnish the engine SM with the information required by AFMCR 65-24, *Engine Component Improvement Program* (currently in revision), AFMCI 21-111, *Depot Maintenance Business Area (DMBA) Financial Operating Procedures*, and AFMCI 21-112, *Repair of Aircraft Engine Critical Parts*. If the engine SM requires other information, the directions for providing that information should also be included in the work specification.

6.1.3. Allow no changes to the agreed funding or requirement without prior approval from the customer.

6.1.4. If required, use the services of the PAO to ensure that work is scheduled and accomplished according to specifications. PAO responsibilities may be expanded as necessary.

## **7. Depot Maintenance of Exchangeables and Other Major End Items.**

**7.1. Controls and Tracking.** Depot maintenance programs involving exchangeables or OMEI must be controlled to ensure that all requirements are completed. The SM will:

7.1.1. For MISTR/EXPRESS workloads, follow the negotiation process spelled out in AFMCR 65-293, *Management of Items Subject to Repair* (MISTR) (where applicable), or the requirements planning for equipment addressed in TO 00-25-108, *Communications-Electronics (C&E) Depot Support*.

7.1.2. For all other equipment, ensure that a review of the project directive and work specification is performed, and that a common understanding of the work requirement exists among the Item Manager (IM), the customer, and the maintenance facility.

7.1.3. Receive prior approval from the customer before changing the work specification.

7.1.4. Use the services of a PAO to ensure that the work is scheduled and accomplished according to specification. The responsibilities of the PAO may be expanded as necessary, or delegated to a

duly authorized person (i.e., the system engineer, etc.) by the SM, if the program has no onsite PAO.

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## **Attachment 1**

### **TIME PHASED PLANNING AND REVIEW ACTIONS**

<b>PLANNING STEP</b>	<b>TARGET DATE</b>
Develop Proposed Depot Program	Jun (28 months before DM year)
SM MRRB	Jun (28 months before DM year)
AF MRRB	Aug (26 months before DM year)
Prepare Work Specifications	Jan (9 months before DM year)
SM/Customer Workload Negotiation	Feb (8 months before DM year)
Work Specification Review	Feb (8 months before DM year)
Change/Revise Next Year Inspection/ Maintenance Requirements	Apr (6 months before DM year)
Sales Rate Approval	Apr (6 months before DM year)
Prepare Work Package	Jul (3 months before DM year)
Develop Fixed Price Worksheet	Jul (3 months before DM year)
Work Package Review	Aug (2 months before DM year)
Review Fixed Price Worksheet	Aug (2 months before DM year)
Work Package/Fixed Price Agreement	Aug (2 months before DM year)
Work Package/Fixed Price Update	Sep (15 days before DM year)
First Item Input	Oct (of DM year)

## Attachment 2

### GLOSSARY OF TERMS

#### *Terms*

**Backshop**—A maintenance function which is not under the responsibility of the aircraft production chief.

**Depot Maintenance**—(DM) Inspections and maintenance repairs requiring skills, equipment or facilities not normally possessed by operating locations. Depot maintenance of weapon systems scheduled on a calendar time cycle.

**Direct Product Standard Hours (DPSH)**—The number of *hands on* man-hours required to do a particular job on an item. It includes only the amount of time consumed doing the required work.

**Element of Expense/Investment Code (EEIC)**—A five character numeric code consisting of a three-digit sub-account code that identifies the type of resources used, followed by a two digit alphanumeric detail code, which is a sub breakout.

**Examination and Inventory (E&I)**—A thorough inspection of an aircraft based on the work specification requirements.

**Exchangeables**—Items issued from inventories in the Air Force to replace unserviceable/ recoverable/ repairable investment type items exchanged or returned to stock.

**EXPRESS**—Execution and Prioritization of Repair Support System (EXPRESS) is the tool which provides the capability to implement critical initiatives for the Requirements Distribution, Workload Management, and Supply Re-engineering efforts. Key processes in EXPRESS include repair requirements identification, prioritization methodology employing both aircraft availability and deepest hole methodologies, supportability analysis of repair resources, output interfaces to automated distribution, workload management decision support tools, and D035 Express Table.

**Fixed Prices**—Aircraft, missile, and other major end item fixed prices are those prices charged the customer for programmed depot maintenance and are computed before the beginning of the year. The exact date for completion of these prices will be established yearly by HQ AFMC/FM. The ALC/FM will submit all requests for changes to fixed prices to HQ AFMC/FM for approval. AFMCI 21-111, paragraph 5.10., covers the detailed explanation of fixed prices.

**Handscribed Operation Assignment Cards (AFMC Forms 173)**—These forms will be used for handscribing operations discovered by the E&I team or a mechanic during maintenance, and for collection of maintenance data. Handscribed operation assignment cards require Project Administration Officer (PAO) approval before work is accomplished.

**High Frequency Predictable Operations**—Planned work operations with occurrences of greater than 20 percent, but less than 100 percent.

**Item Manager (IM)**—The person charged with control of the inventory on a specific stock numbered item.

**Low Frequency Predictable Operations**—Those operations which are known to occur, but which are uneconomical to preplan. Items in this category must be explicit to prevent confusion with O&A type work and must be clearly stated in the work specification.

**Maintenance Requirements Review Board (MRRB)**—A process that provides for the development,



review, validation, and approval of depot maintenance needs and intervals for Air Force aircraft and missile systems.

**Maintenance Review Team (MRT)**—The group which reviews handscribed or unplanned work cards to determine the necessity of performing the work, and to determine whether the work is a part of the negotiated work package, or an O&A requirement. The maintenance activity will designate team composition and the method of operation.

**Management of Items Subject to Repair (MISTR)**—Includes items programmed for repair to support the supply demand system.

**One Hundred Percent Predictable Operations**—Within a specific workload, operations which occur on each item processed.

**Other Major End Item (OMEI)**—Any high cost, complex system which is not an aircraft or a missile. It is typical for these items to be serially controlled and have continuous or long repair flow times.

**Over-and-Above (O&A) Work**—Required work which is not identified or directed in the work specification. Such work is not authorized until approved by the PAO.

**Program Control Number (PCN)**—A six digit alphanumeric code used to identify a specific workload for a specific end item. The first digit denotes the funding source, the second digit denotes the Repair Group Category of the workload, and the third digit denotes the activity which manages the item to which the PCN is assigned. The fourth through sixth digits are assigned by the managing activity.

**Program Manager**—The Product Group Manager or Materiel Group Manager who is responsible for the proper execution of a single contract for repair or modification.

**Project Administration Officer (PAO)**—A representative of the SM who provides on-the-spot interface between the SM and the organic maintenance facility. The PAO is normally located within the maintenance facility, but not normally assigned to the maintenance organization.

**Safety of Flight (SOF)**—A failure or malfunction which could present a hazardous condition to an aircraft or personnel during a mission.

**Satisfactory As Is (SAI)**—The determination that an inspected condition is within technical limits. This determination will be based on technical order criteria and/or the findings of responsible engineering personnel.

**Single Manager (SM)**—The individual responsible for the well being of a weapon system such as an SPD, SSM, MGM, or PGM.

**Work Package**—The translation of the work specification requirements into job operations.

**Work Specification**—Standard work instructions prepared according to AFMCR 65-22.